

REMARKS/ARGUMENTS

Applicant wishes to express its appreciation to the Examiner for pointing out numerous minor inconsistencies in the specification and drawings which have been cured by the foregoing amendments to the specification and the drawings. The curative effect of the amendments is obvious and need not be pointed out further.

Claims 1-19, 22-38 and 42-50 remain in the application. Claims 20-21 and 39-41 have been withdrawn from consideration as directed to a non-elected species.

Claims 1-19 and 22-37 have been rejected; claims 42-50 stand allowed; claim 38 is objected to.

Objections

7a) Applicant respectfully traverses the Examiner's objection to claims 1, 34 and 42. The Examiner suggests that in each of the aforementioned claims, the feature "the portion of the objective aperture" should be changed to "a portion of the objective aperture.

Applicant respectfully disagrees with the Examiner, as the suggested change is less precise in describing Applicant's invention.

One aspect of Applicant's invention is in limiting the area of the objective aperture through which light passes to something less than the entire area of the aperture. In addition to limiting the light that passes through the aperture to only a portion of the aperture, the dynamic aperture mask also moves so that the portion of the aperture which is permitted to pass light

changes continuously.

At any instant in time, light passes through some portion of the objective aperture which is less than the entire aperture. According to the invention, the particular portion of the objective aperture through which light passes continuously changes to create motion parallax.

By the use of the article “the” rather than “a”, it is clear that the light beam position in the objective aperture changes.

With this explanation in mind, it is respectfully requested that the Examiner reevaluate the objection to this current wording of the claim and withdraw the objection.

7) Claim 15 has been amended to add the word “aperture” to “objective.”

CLAIM REJECTIONS - 35 U.S.C. § 102

Overview

The clearly distinguishing characteristic of Applicant's invention over all of the cited prior art is that Applicant exploits the concept of motion parallax to create a dynamic 3-D image.

To the extent that any of the cited references teach methods and/or apparatus for creating a perceivable 3-D image, they all result in a static 3-D image and, in some cases, an ersatz 3-D image which is really only shadowing.

While one or more of the cited references teach the use of carriers by which different masks and other devices can be disposed at the objective aperture of a lens in a microscope system, none of the cited references suggest

that the carrier be moved continuously while the specimen is being observed, but rather teach that the carrier be moved into the area of the objective aperture and remain there in a static state while the specimen is viewed.

By contrast, Applicant teaches the imposition of a mask at the objective aperture which mask limits the area of the aperture through which light passes to only a portion of the aperture and then, during viewing, continuously changes the portion of the aperture through which light passes to create motion parallax which presents to the viewer a dynamic 3-D image.

The mask that limits the area of the objective aperture that passes light and continuously changes is a single mask, as opposed to multiple masks, as taught by the prior art.

Applicant has amended the specification to define the term "dynamic aperture mask" in greater detail as to those features of Applicant's invention which do not exist in the prior art.

Applicant has also made amendments to the independent claims to emphasize the distinguishing features pointed out above and clearly implicit in the original claims.

9. Applicant respectfully traverses the Examiner's rejection under 35 U.S.C. 102(b) of claims 1, 3-4, 7, 16 and 34-35 on the basis of Piller et al. (US Patent 4,407,569).

Nothing in Piller suggests the creation of motion parallax as a means for achieving a 3-D image.

Piller suggests the use of a diaphragm with a ring segment to create "a

relief effect.” It is clear from the context and teachings of Piller that the observer views the specimen while the diaphragm is in a static state. Although the diaphragm can be rotated in order to change the angle at which the light approaches the specimen, it is clear that the rotation is transitory and not continuous during viewing. What Piller fails to teach is the continuous rotation of the diaphragm ring to create motion parallax.

Claim 1 has been amended to including means continuously changing the portion of the objective aperture through which light passes while the object is being viewed to create motion parallax.

Nothing of the sort is taught in Piller and to suggest that Piller be modified in any way to create motion parallax as taught by Applicant could be justified only by the use of hindsight. Accordingly, claims 1 and 3-4 clearly distinguish over Piller.

While claim 7 has not been amended, the definition of “dynamic aperture mask” has been amended in the specification to make explicit what was implicit in the original definition.

Accordingly, claim 7 distinguishes over Piller.

Claim 34 has been amended to state that the elements create motion parallax and, for all the reasons set forth above, thereby distinguish over Piller.

Accordingly, Applicant respectfully submits that claims 1, 3-4, 7, 16 and 34-35 are, in view of the amendments to the claims and the specification, clearly distinguishable over Piller et al. and Applicant requests that the 102(b) rejection on the basis of Piller be withdrawn.

10. Applicant respectfully traverses the Examiner's rejection of claims 1, 3-4, 7, 13-19 and 34-36 under 35 U.S.C 102(b) on the basis of Greenberg (US Patent 5,706,128).

Greenberg, with which Applicant is familiar, teaches a carrier having a plurality of various screens that can be aligned with the objective aperture of an objective lens.

The various screens illustrated in Fig. 3 include not only apertures, but filters and other devices.

The assertion that the rotation of the carrier 27 about its axis 28 is the equivalent of Applicant's claimed invention cannot withstand scrutiny.

Applicant's amended claims make it clear that the mask being rotated is a single mask located at the objective aperture and not a plurality of masks sequentially introduced at the objective aperture, as would be the case in Greenberg '128.

Furthermore, the rotation of carrier 27 would not create a continuous change in the portion of the objective aperture through which light passed, but rather disjointed pulses of light which would not create the 3-D effect achieved by Applicant's invention.

Furthermore, Greenberg '128 does not teach a means for continuously rotating carrier 28 while the specimen is being viewed, nor the suggestion that a specimen be viewed other than while the carrier is static.

For all of the reasons set forth above, claims 1, 7 and 34 clearly distinguish over Greenberg '128 and, thus, those claims and their dependent

claims are allowable over Greenberg '128.

11. Applicant respectfully traverses the Examiner's rejection under 35 U.S.C. 102(b) of claims 7, 10-11 and 13-15 on the basis of Bauerschmidt (German reference 34 09 657).

Once again, the rotation of the carrier is not the same as the rotation of the mask and, for all of the reasons set forth above with regard to Piller and Greenberg, claim 7 is clearly allowable over this German reference, as are the claims dependent on claim 7.

CLAIM REJECTIONS - 35 U.S.C. § 103

13. The rejection of claim 9 under 35 U.S.C. 103(a) as being unpatentable over Bauerschmidt is respectfully traversed. As demonstrated above, claim 7 of which claim 9 is dependent is clearly allowable over Bauerschmidt and, thus, the more restrictive dependent claim 9 is also allowable.

14. Applicant respectfully traverses the Examiner's rejection of claims 22-23, 26-27 and 32 as being unpatentable over Piller et al. under 35 U.S.C. 103(a).

Applicant respectfully submits that the rejection is improper in that the Examiner's conclusion that an observer would be able to design a method for viewing an image of an object in three-dimensional aspect by setting forth the step of continually rotating the diaphragm is without support and merely illustrates that the Examiner has been exposed to Applicant's invention.

Furthermore, Applicant has demonstrated above that claim 22 is

distinguishable over Piller and thus allowable. Claims 23, 26-27 and 32, which are dependent on claim 22, are likewise allowable.

The recognition by the Examiner that Piller could be modified in some way to achieve Applicant's invention is not the proper basis for a 103(a) rejection as clearly set forth in Ex Parte Levengood, 28 USPQ 2d 1300, 1301-1302 (TTAB 1993) wherein the Board stated:

In this case, however, the only suggestion of the isolated teachings of the applied reference improperly stems from the Applicant's disclosure and not from the applied prior art. In In Re Ehreich, 590 F.2d 902, 200 USPQ 504 (CCPA 1979), at best, the Examiner's comments regarding obviousness amount to assertion that one of ordinary skill in the relevant art would have been able to arrive at Applicant's invention because he had the necessary skills to carry out the requisite steps. This is an inappropriate standard for obviousness. See Orthokinetics, Inc. v. Safe Travel Chairs, Inc., 806 F.2d 1565 1 USPQ 2d 1801 (Fed. Cir. 1986). That which is within the capabilities of one skilled in the art is not synonymous with obviousness. [Citations omitted]. That one can *reconstruct* and/or explain the theoretical mechanism of an invention by means of logic, sound or scientific reasoning does not afford the basis for an obviousness conclusion unless that logic and reasoning also supplies sufficient impetus to have led one of ordinary skill in the art to combine the teachings of reference with the claimed invention.

The suggestion for continuously rotating the mask while the specimen is being viewed in order to create motion parallax is nowhere suggested or even hinted at in Piller. To modify Piller by providing means that would continuously rotate the mask while the specimen is being viewed in order to create motion parallax is only proper if the suggestion for doing so comes from the prior art. No such suggestion has been proffered by the Examiner.

15. Applicant respectfully traverses the Examiner's rejection of claims 22-23, 26-27 and 32 under 35 U.S.C. 103(a) on the basis of Greenberg '128.

Once again, the Examiner makes a 103(a) rejection which is improper for the reasons set forth above and as set forth by the Federal Circuit in Sensonics Inc. v. Aerosonic Corp., 38 USPQ 2d 1551, 1554 (CAFC 1996), where it stated:

“To draw on hindsight knowledge of the patented invention, when the prior art does not contain or suggest that knowledge, is to use the invention as a template for its own reconstruction -- an illogical and inappropriate process by which to determine patentability.”

The suggested modification of Greenberg is not found in the prior art.

As demonstrated above, the Greenberg '128 carrier rotates a variety of different screens into alignment with the objective aperture. The screens are separated by an opaque carrier such that rotation of the carrier would not create a continuously changing angle of illumination which creates motion parallax. Thus, even if the suggestions for modification of Greenberg '128 were proper (which it is not), the claimed invention would not be achieved.

16. Applicant respectfully traverses the rejection of claims 22-23, 25-27 and 32 under 35 U.S.C. 103(a) as being unpatentable over Fujihara et al. (US Patent 4,852,985).

Once again, the Examiner makes an improper rejection by failing to support the conclusion that an observer would be able to use the apparatus in order to achieve the results taught by Applicant. The legal requirement is that the use of the apparatus as taught by Applicant be found in the prior art.

The Examiner has failed to point to any such prior art. What the Examiner appears to have overlooked is that without Applicant's teachings, there would be no suggestion for using the apparatus of Fujihara to practice

the invention of Applicant's method. The Federal Circuit speaks to this very point in In re Fritch, 23 USPQ 2d 1780 (CAFC 1992) where it say:

“Obviousness cannot be established by combining the teachings of the prior art to produce the claimed invention, absent some teaching or suggestion supporting the combination. Under Section 103, teachings of references can be combined *only* if there is some suggestion or incentive to do so.” Although couched in terms of combining teachings found in the prior art, the same inquiry must be carried out in the context of a purported obvious “modification” of the prior art. The mere fact that the prior art may be modified in the manner suggested by the Examiner does not make the modification obvious unless the prior art suggested the desirability of the modification. Wilson and Hendrix [Yonekubo and Schulman] fail to suggest any motivation for, or desirability of, the changes espoused by the Examiner and endorsed by the Board.

Here, the Examiner relied upon hindsight to arrive at the determination of obviousness. It is impermissible to use the claimed invention as an instruction manual or “template” to piece together the teachings of the prior art so that the claimed invention is rendered obvious. This court had previously stated that “[o]ne cannot use hindsight reconstruction to pick and choose among isolated disclosures in the prior art to deprecate the claimed invention.” (Underlining added)

See also, Sensonics Inc. v. Aerosonic Corp., and Ex Parte Levengood, *supra*.

Claim 22 being allowable, Applicant respectfully submits that claims 23, 25-27 and 32, which are dependent on claim 22, are equally allowable.

17. Applicant respectfully traverses the rejection of claims 1-7, 16, 22-23 and 26-33 under 35 U.S.C. 103(a) as being unpatentable over Taira (US Patent 4,413,889) in view of Piller et al. (US Patent 4,407,569).

The combination of Taira and Piller is improper in that no suggestion for their combination is cited by the Examiner. The combination is improper for all the reasons stated in In re Fritch, Sensonics Inc. v. Aerosonic Corp., and Ex

Parte Levengood, supra.

Furthermore, the Examiner mischaracterizes Piller as teaching the rotation of a mask during viewing in order to achieve motion parallax.

The Examiner readily admits that Taira does not suggest that the sector-shaped mask be rotated and attempts to cure that deficiency by combining Piller which, although it has a means for adjusting the position of an aperture mask, in no way suggests that the mask be continuously rotated in order to achieve motion parallax.

Thus, Applicant respectfully submits that the combination is improper and, even if made, does not achieve Applicant's invention. Applicant requests that the rejection be withdrawn.

18. Applicant respectfully traverses the Examiner's rejection of claims 1-8, 12-16, 22-24 and 26-36 under 35 U.S.C. 103(a) as being unpatentable over Kley (US Patent 4,561,731) in view of Piller et al. (US Patent 4,407,569).

Applicant repeats all of the arguments made above in connection with the other 103(a) rejections including the inappropriateness of the suggested combination.

Furthermore, the characterization of Piller is once again erroneous. Piller does not suggest rotation of an aperture mask, but rather provides for the changing of the position of a mask in order to obtain a desired angle of illumination, after which the specimen is viewed with the mask static.

In essence, what the Examiner has done in all of the 103(a) rejections is to find various elements of Applicant's invention in one or more prior art

patents and then suggest that they be combined and operated as taught only by Applicant.

That form of rejection has been consistently frowned upon by the courts as impermissible. In In re Fine, 5 USPQ2d 1596 (CAFC 1988), the point is made clear:

. . .The PTO has the burden under section 103 to establish a *prima facie* case of obviousness. It can satisfy this burden only by showing some objective teaching in the prior art or that knowledge generally available to one of ordinary skill in the art would lead that individual to combine the relevant teachings of the references. In re Fine, at page 1598. (Emphasis added)

The Board reiterated the Examiner's bald assertion that "substitution of one type of detector for another in the system of Eads would have been within the skill of the art," but neither of them offered any support for or explanation of this conclusion. In re Fine, at page 1599. (Emphasis added)

The Eads and Warnick references disclose, at most, that one skilled in the art might find it obvious to try the claimed invention. But whether a particular combination might be "obvious to try" is not a legitimate test of patentability. In re Fine, at page 1599.

Instead, the Examiner relies on hindsight in reaching his obviousness determination. . . . To imbue one of ordinary skill in the art with knowledge of the invention in suit, when no prior art reference or references of record convey or suggest that knowledge, is to fall victim to the insidious effect of a hindsight syndrome wherein that which only the inventor taught is used against its teacher. In re Fine, at pages 1599-1600.

One cannot use hindsight reconstruction to pick and choose among isolated disclosures in the prior art to deprecate the claimed invention. In re Fine, at page 1600.

Accordingly, Applicant submits that the Kley/Piller combination is improper and, if made, does not achieve Applicant's invention.

19. Applicant respectfully traverses the rejection of claim 37 under 35

U.S.C. 103(a) on the basis of Greenberg '128 in view of Ozeki (US Patent 4,836,667).

Once again, Applicant respectfully points out that the suggested combination is improper for all the reasons set out above. Furthermore, Applicant has shown above that the rotation of carrier 28 of Greenberg does not achieve continuous change of angle of illumination, as in Applicant's invention, and would not achieve the motion parallax which provides the invention with its ability to see objects in 3-D.

ALLOWABLE SUBJECT MATTER

20. Applicant notes with appreciation the allowance of claims 42-50.

21. Claim 38 has been indicated as allowable. Applicant respectfully submits that claim 37 has been shown to be allowable, as well, and therefore has not rewritten claim 38 in independent form.

Applicant encloses a Credit Card Payment Form authorizing the amount of \$55, together with its petition for a one-month extension in which to respond.

CONCLUSION

Applicant has amended the rejected independent claims which remain in the application to more explicitly point out the features of Applicant's invention which were implicit as originally submitted and which distinguish over the prior art.

Applicant's invention resides in disposing a dynamic aperture mask at the aperture of a light microscope in order to (a) limit the area of the aperture

through which a light beam passes to an area less than the entire area of the objective aperture and (b) to continuously change the area of the objective aperture through which the light beam passes in order to continuously change the angle of illumination of the specimen being viewed so as to create motion parallax, enabling the viewer to see a dynamic 3-D image.

Nothing in the prior art remotely suggests the creation of motion parallax as a means for producing a 3-D image. While the Examiner has located certain elements of Applicant's invention in various patents in the prior art, the particular combination claimed by Applicant is nowhere to be found in the prior art, and the various combinations of prior art elements suggested by the Examiner as amounting to Applicant's invention are improper as not being suggested by the prior art, but rather by Applicant.

Accordingly, Applicant respectfully requests that the various objections and rejections to the claims specified above be withdrawn and the claims remaining in the case be deemed allowable.

Respectfully submitted,

Dated

12/02/03

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